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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,759	12/10/2003	Zbigniew Kubala	109	6552

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EXAMINER

HEWITT, JAMES M

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/732,759

Applicant(s)

KUBALA, ZBIGNIEW

Examiner

James M. Hewitt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/10/03, 2/27/04, 2/28/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 10-12 is/are rejected.
- 7) ☒ Claim(s) 4,5 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/27/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 2/27/04 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the publication date of each of the references provided on the PTO form 1449 are not provided. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Claim Objections

Claims 1-12 are objected to because of the following informalities:

In claim 1 lines 3-4, it is unclear as to what the phrase "and adapted to receive fluid coolant and structurally arranged to direct the coolant through the union and an associated tubular rotor" modifies.

In claim 1 line 12, "the operating pressurized condition" lacks proper antecedent basis.

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In claim 1 lines 15-16, "the unpressurized condition" lacks proper antecedent basis.

In claim 2 line 1, should "claim 8" be "claim 1"?

In claim 2 lines 2-3, "chamfered surface" should be "chamfered portion".

In claim 3 lines 1-2, "the rotating or non-rotating seal members" lacks proper antecedent basis.

In claim 5 lines 1-2, "said chamfered sealing surface" lacks proper antecedent basis.

In claim 5 lines 2-3, "said other sealing surface" lacks proper antecedent basis.

In claim 10 line 2, "forwardly" relative to what?

In claim 10 line 2, "the gap" lacks proper antecedent basis.

In claim 10 line 3, "the inner wall of the union housing" lacks proper antecedent basis.

In claim 11 lines 1-2, "said secondary seal assembly" lacks proper antecedent basis.

In claim 11 line 3, the phrase "defining a cylindrical chamber" should be deleted.

In claim 11 line 4, "the gap" lacks proper antecedent basis.

In claim 11 lines 4-5, "the inner wall of the union housing" lacks proper antecedent basis.

In claim 11 line 5, "said chamfered portion" lacks proper antecedent basis.

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In claim 11 lines 5- 7, the phrase "with said chamfered portion...being structurally arranged to engage a back-up ring...*to provide an unfilled volume*...of said floating seal assembly" is unclear. What is meant by the phrase "to provide an unfilled volume"?

In claim 11 line 7, "said floating seal assembly" lacks proper antecedent basis.

In claim 11 line 8, "the separation" lacks proper antecedent basis.

In claim 12 line 1, "said back-up ring" lacks proper antecedent basis.

In claim 12 lines 2-3, "said chamfered surface" lacks proper antecedent basis.

In claim 12 line 3, "said U-shaped seal member" lacks antecedent basis.

Claims 1, 6 and 11 are objected to under 37 C.F.R. 1.75(i), which states "Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubala (US 5,617,879) in view of Watts (US 4,201,392).

Kubala discloses a coolant union (10) having a primary seal assembly and a tubular carrier member (40) axially movable within a union housing (16) having a wall

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defining a cylindrical inner chamber and having an annular groove (91) within the housing and adapted to receive fluid coolant and structurally arranged to direct the coolant through the union and an associated tubular rotor (18), with the rotor having a sealing member thereon (70) and the axially movable tubular carrier member having a sealing member thereon (38), with the carrier member axially movable between a pressurized position wherein the sealing members are in contact and an unpressurized position wherein said sealing members are spaced apart from each other, with the coolant union having a secondary seal assembly including in combination: a seal member (89) positioned in the annular groove within the housing and structurally arranged to provide a seal between the carrier member and the cylindrical inner chamber of the housing when the coolant union is in the operating pressurized condition; and wherein said seal member is structurally arranged to cooperate with a back-up ring member (90) to provide an unfilled volume defined by said chamfered portion to prevent dry-running of said primary seal assembly when the union is operating in the unpressurized condition. Kubala fails to teach that his seal member (89) is U-shaped and includes a chamfered portion that cooperates with the back-up ring member. Watts teaches a sealing assembly that functions much like that of Kubala's sealing assembly and includes a U-shaped seal (12) that cooperates with a back up ring (16) to allow for bleeding when pressurized fluid comes from one direction, while providing an effective seal when the pressurized fluid comes from the opposite direction. In view of Watts' teaching, it would have been obvious to modify Kubala's seal member (89) with a U-shaped ring and spacer ring in order to provide an

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alternative sealing assembly and/or provide effective sealing in both high and low pressure environments.

With respect to claim 2, wherein said back-up ring is triangular shaped and includes a surface which is structurally arranged to cooperate with said chamfered surface on said U-shaped seal member.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubala (US 5,617,879) in view of Watts (US 4,201,392) as applied to claim 1 above, and further in view of Deubler (US 2,723,136).

Kubala and Watts fail to teach that one of the seal members is chamfered. Deubler teaches a rotary union similar to that of Kubala having a seal member that is chamfered, to enhance and optimize sealing during operation. In view of Deubler's teaching, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kubala's rotating seal member with a chamfered surface in order to enhance and optimize sealing during operation.

Claims 6-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker (US 3,405,959) in view of Deubler (US 2,723,136).

Walker discloses a coolant union having a tubular carrier member (12) axially movable within a union housing having a wall defining a cylindrical inner chamber, with the carrier member adapted to receive fluid coolant and structurally arranged to direct the coolant through the union to an associated tubular rotor (6), with the coolant union

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having a seal assembly including in combination: a first seal member (17) presenting an annular sealing surface mounted to and rotatable with said rotor; a non-rotating second seal member (9/8) presenting an annular sealing surface mounted to the tubular carrier member for axial movement within the housing between an unpressurized position wherein said second seal member is spaced apart from said first seal member and a pressurized position wherein said first and said second seal members are structurally arranged to provide a seal between the annular sealing surfaces of said rotating and said non-rotating seal members. Walker fails to teach at least one of the annular sealing surfaces presented by said rotating seal member and said non-rotating seal member is chamfered such that the width of one of said annular sealing surfaces is less than the width of said other annular sealing surface. Deubler teaches a rotary union similar to that of Walker having a seal member that is chamfered, to enhance and optimize sealing during operation. In view of Deubler's teaching, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Walker's rotating seal member with a chamfered surface in order to enhance and optimize sealing during operation.

With respect to claim 7, wherein the width of said chamfered sealing surface provides a sealing surface of approximately one-half the width of said other sealing surface.

With respect to claim 8, wherein each of said first and said second seal members have different porosity values (sealing members are of different materials) for absorbing

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the fluid coolant to provide self-lubrication and resistance to dry running conditions of the coolant union.

With respect to claim 10, wherein said coolant union further includes a secondary seal assembly (14) for preventing coolant leakage forwardly through the gap between the carrier member and the inner wall of the union housing.

Claims 6-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pearson et al (US 5,577,775) in view of Deubler (US 2,723,136).

Pearson et al disclose a coolant union having a tubular carrier member (7) axially movable within a union housing (30) having a wall defining a cylindrical inner chamber, with the carrier member adapted to receive fluid coolant and structurally arranged to direct the coolant through the union to an associated tubular rotor (4), with the coolant union having a seal assembly including in combination: a first seal member (6) presenting an annular sealing surface mounted to and rotatable with said rotor; a non-rotating second seal member (8) presenting an annular sealing surface mounted to the tubular carrier member for axial movement within the housing between an unpressurized position wherein said second seal member is spaced apart from said first seal member and a pressurized position wherein said first and said second seal members are structurally arranged to provide a seal between the annular sealing surfaces of said rotating and said non-rotating seal members. Pearson et al fail to teach at least one of the annular sealing surfaces presented by said rotating seal member and said non-rotating seal member is chamfered such that the width of one of

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said annular sealing surfaces is less than the width of said other annular sealing surface. Deubler teaches a rotary union similar to that of Pearson et al having a seal member that is chamfered, to enhance and optimize sealing during operation. In view of Deubler's teaching, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Pearson et al's rotating seal member with a chamfered surface in order to enhance and optimize sealing during operation.

With respect to claim 7, wherein the width of said chamfered sealing surface provides a sealing surface of approximately one-half the width of said other sealing surface.

With respect to claim 8, wherein each of said first and said second seal members have different porosity values for absorbing the fluid coolant to provide self-lubrication and resistance to dry running conditions of the coolant union.

With respect to claim 10, wherein said coolant union further includes a secondary seal assembly (11/12) for preventing coolant leakage forwardly through the gap between the carrier member and the inner wall of the union housing.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pearson et al (US 5,577,775) in view of Deubler (US 2,723,136) as applied to claim 6 above, and further in view of Watts (US 4,201,392).

Pearson et al fail to teach the secondary seal assembly as claimed in claim 11, particularly that the assembly includes a U-shaped annular seal member having a chamfered surface that cooperates with a back up ring. Watts teaches a sealing

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assembly that functions much like that of Pearson et al's secondary sealing assembly (11/12) and includes a U-shaped seal (12) that cooperates with a back up ring (16) to allow for bleeding when pressurized fluid comes from one direction, while providing an effective seal when the pressurized fluid comes from the opposite direction. In view of Watts' teaching, it would have been obvious to modify Pearson et al's sealing assembly (11/12) with a U-shaped ring and spacer ring and back up ring in order to provide an alternative sealing assembly and/or provide effective sealing in both high and low pressure environments.

Allowable Subject Matter

Claims 4-5 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Note that the allowability of claims 4-5 and 9 is also contingent upon overcoming the above-noted objections to claims 1, 4 and 6. See ***Claim Objections*** above.

Conclusion

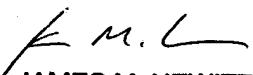
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Hewitt whose telephone number is 571-272-7084.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Stodola can be reached on 571-272-7087. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JAMES M. HEWITT
PRIMARY EXAMINER